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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,279	08/31/2006	Naokazu Kobayashi	295538US0PCT	9398

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LENIHAN, JEFFREY S

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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04/01/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/591,279	Applicant(s) KOBAYASHI ET AL.	
	Examiner Jeffrey Lenihan	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/29/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 12/29/2008.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Claim Rejections - 35 USC § 103

4. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al, WO2003/029299, in view of Kobayashi et al, JP 2001-114936 (of record). Tsukimawashi et al, US2004/0254301, is utilized as an equivalent English translation of WO 2003/029299.
5. A discussion of the disclosures of Tsukimawashi and Kobayashi, JP 2001-114936, can be found in paragraphs 3-10 of the previous Office Action, incorporated herein by reference.
6. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al, JP 2001-114936 (of record), in view of Kobayashi et al, WO 2003/029299 (of record). Tsukimawashi et al, US2004/0254301, is utilized as an equivalent English translation of WO 2003/029299.
7. As noted in the previous Office Action, Kobayashi teaches that the copolymer (b) serves to increase the compatibility of the rubber composition with a filler such as carbon black, thereby improving the tensile strength of the vulcanizate. Tsukimawashi discloses that the copolymer of US2004/0254301 yields improved processability to

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rubber compositions containing fillers such as carbon black and silica (¶0030), and discusses that this improvement is attributed to the affinity for the inorganic filler conferred by the presence of the functional groups in the polymer (¶0029); the examiner notes that this corresponds to the function of a compatibilizing agent.

8. As Tsukimawashi and Kobayashi both disclose a conjugated diene-based rubber comprising a polymer chain having an amine group at one terminus and an alkoxysilyl group at the other, as well as the use of the respective polymers for binding fillers such as carbon black in rubber, the examiner takes the position that copolymer represented by formula (2) of Tsukimawashi and copolymer (b) of Kobayashi are functional equivalents used for the same purpose in the art. The examiner therefore takes the position that it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the composition of Kobayashi by substituting the copolymer of formula (2) of Tsukimawashi for copolymer (b) of Kobayashi, with the reasonable expectation of producing a compatibilized rubber/carbon black composition.

Response to Arguments

9. Applicant's arguments filed 12/29/2008 have been fully considered but they are not persuasive.

10. Applicant argues that the combination of references does not teach a composition comprising two conjugated diene-based copolymer rubbers having the claimed molecular weights, and therefore cannot render the claimed composition obvious.

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11. Tsukimawashi discloses a conjugated diene-based copolymer rubber represented by either Formula (1) or (2), corresponding to claimed component (I), which is characterized by a molecular weight that is usually within the range of 100,000 to 2,000,000. Tsukimawashi further teaches that decreasing the molecular weight lowers properties such as breaking strength (§0181). The examiner notes that it is known in the art that the molecular weight of a polymer is related to its melt flow rate (MFR); an increase in the molecular weight of a polymer results in a reduced MFR, thereby reducing processability. The examiner therefore takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the disclosure of Tsukimawashi by reducing the molecular weight of the copolymer rubber for use in applications wherein high MFR is more desirable than high breaking strength. Tsukimawashi further teaches that the copolymer may be blended with other conjugated diene-based rubbers such as natural rubber (§0192).

12. As discussed in the previous Office Action, Kobayashi teaches a rubber composition comprising two conjugated diene-based rubbers, (a) and (b), wherein either (a) or (b) has a molecular weight of 1,000 to 90,000; the other component has a molecular weight of 90,000 to 2,000,000. Kobayashi further discloses that component (b) may be a copolymer having a structure comprising a conjugated diene-based polymer chain which is modified with an amine group at one terminus and an alkoxysilyl group at the other terminus, similar to formula (2) of Tsukimawashi (see paragraph 8 of the previous Office Action). Both references are directed toward the same field of invention and use similar polymers combined with carbon black as a filler, the examiner

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maintains the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Tsukimawashi by adding a second conjugated diene-based copolymer rubber, to produce a rubber composition wherein the components have the claimed molecular weights.

13. Applicant further argues that unexpected results are obtained from the claimed composition, and cites Examples 1-3 from the submitted specification as evidence. The cited Example 1 recites a composition comprising a diene-based copolymer rubber corresponding to claimed structure 1, wherein the primary amine group is bonded to the silicon atom of an alkoxysilyl group. The examiner notes that the claim rejections are based on the claimed structure (2). Applicant has therefore not demonstrated unexpected results for the composition rejected over the cited documents; and not comparing it to the closest prior art.

14. The examiner further takes the position that the allegedly unexpected results are not commensurate in scope with the instant claims. The claims recite a composition comprising 0.5 to 35% by weight of a conjugated diene-based rubber corresponding to either claimed structure (1) or (2) (A), and 65 to 99.5% by weight of a second conjugated diene-based rubber (B). The cited example does not demonstrate any allegedly unexpected results for a) compositions containing the diene-based rubber corresponding to claimed structure (2), or b) compositions wherein the claimed components (A) and (B) are combined in any ratio other than A/B equal to 5/95.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Jeffrey Lenihan
Examiner, Art Unit 1796

/JL/